

What is claimed is:

1. A method of producing a library of composite or composition samples on a substrate sheet comprising: forming a plurality of different composite or composition samples on said sheet, said samples comprising one or more components deposited on said substrate sheet in the form of a concentration gradient of said one or more components in the shape of a triangle, and testing said samples for properties.

2. The method of claim 1, wherein said samples are tested for properties while said samples remain on said sheet.

3. The method of claim 1, wherein said samples are tested for said properties after removing said samples from said substrate sheet.

4. The method of claim 3, wherein said samples are removed from said substrate sheet by cutting said samples along with said underlying substrate from said substrate sheet.

5. The method of claim 4 wherein said samples are composites.

6. The method of claim 5, wherein said composites removed from said substrate sheet are heterogeneous catalysts.

7. The method of claim 1, wherein said components are deposited as a dry solid or as a solid contained within a liquid carrier onto said substrate sheet.

8. The method of claim 1, wherein at least one of said components is deposited from a slurry of said component in a liquid carrier.

9. The method of claim 1, wherein at least one of said components is deposited from a solution of such component within a solvent.

10. The method of claim 1, wherein at least one of said components is deposited onto said substrate sheet by a screen-printing process.

11. The method of claim 1, wherein at least one of said deposited components is an inorganic material or a carbon.

12. The method of claim 5, wherein at least one of said deposited components is a hydrocarbon-based polymer.

13. The method of claim 1, wherein said sample is a composition and said deposited component is a reactive hydrocarbon-based monomer.

14. The method of claim 1, wherein said substrate sheet is selected from metal, ceramic, glass, polymer or composite of at least two of said components.

15. The method of claim 14, wherein said substrate sheet is cordierite.

16. The method of claim 14, wherein said substrate sheet is alumina, aluminum or stainless steel.

17. The method of claim 1, wherein each of at least two components is deposited onto said substrate sheet in a continuous concentration gradient patterned as an equilateral triangle.

18. The method of claim 17, wherein:

a) all components are superimposed on a single equilateral triangle pattern, and

b) for each component, the concentration is highest at one apex of said triangle pattern and lowest at a base opposite said apex, said apex being the same or different for each component.

19. The method of claim 1, wherein each of three components is deposited onto said substrate sheet in a continuous concentration gradient patterned as an equilateral triangle.

20. The method of claim 19, wherein:

a) all components are superimposed on a single equilateral triangle pattern, and

b) for each component, the concentration is highest at one apex of said triangle pattern and lowest at a base opposite said apex, said apex being the same or different for each component.

21. The method of claim 20, wherein at least one additional component is uniformly deposited on said

substrate sheet in any pattern and superimposed with the three components deposited as continuous concentration gradients.

22. The method of claim 21, wherein said at least one additional component is deposited before, after, or in-between deposition of said three components deposited as continuous concentration gradients.

23. The method of claim 1 wherein said sample is a catalyst, adsorbent, or pigment.

24. The method of claim 19 wherein said sample is a catalyst, adsorbent, or pigment.

25. The method of claim 22 wherein said sample is a catalyst, adsorbent, or pigment.

26. The method of claim 5 comprising: cutting the substrate sheet so as to provide said sheet with a plurality of cut shaped portions which are spaced from each other on the surface of the sheet, depositing said at least one component on the surface of said sheet whereby the cut shaped portions of said sheet are covered by at least one of said deposited components, and removing said covered cut shaped portions of said sheet to form composite samples, said composite samples comprising said substrate containing at least one deposited component thereon in the form of said shaped portion.

27. The method of claim 26, wherein said substrate sheet is a ceramic.

28. The method of claim 27, wherein said ceramic is cordierite.

29. The method of claim 26, wherein said cut shaped portions are still attached to said substrate sheet, said composite samples being removed from said sheet by applying pressure to said cut shaped portions.

30. The method of claim 26, wherein said cut shaped portions are formed from perforations made on the surface of said substrate sheet.

31. The method of claim 18 wherein said lowest concentration is 0%.

32. The method of claim 20 wherein said lowest concentration is 0%.

33. The method of claim 1 wherein at least two components are deposited and reacted with each other to form a new composition.

34. The method of claim 18 wherein said sample is a composite.

35. The method of claim 20 wherein said sample is a composite.

36. The method of claim 35 wherein said composite is a catalyst.

37. The method of claim 18 wherein each deposited component comprises a metal or metal oxide supported on a metal oxide support.

38. The method of claim 20 wherein each deposited component comprises a metal or metal oxide supported on a metal oxide support.

39. The method of claim 37 wherein said metal is a Group VIII metal.

40. The method of claim 38 wherein said metal is a Group VIII metal.

41. The method of claim 37 wherein said metal oxide support is alumina.

42. The method of claim 38 wherein said metal oxide support is alumina.